ZooKeys 1270: 245–254 (2026)
DOI: 10.3897/zookeys.1270.158304

Research Article

Another two new aphid species of the genus *Cryptomyzus* Oestlund, 1922 (Hemiptera, Aphididae, Macrosiphini) from Kazakhstan

Rustem Kh. Kadyrbekov[1,2], Aizhan M. Tleppaeva[1,2], Sergey V. Kolov[2]

1 *West Kazakhstan University, N. Nazarbaev avenue 162, Uralsk, 0900000, Kazakhstan*

2 *Institute of Zoology, Ministry of Sciences and Higher Education of Kazakhstan Republic, Academgorodok, Al-Farabi avenue, 93, Almaty, 050060, Kazakhstan*

Corresponding author: Rustem Kh. Kadyrbekov (rustem_aijan@mail.ru; rustem.kadyrbekov@zool.kz)

Abstract

Two new species of the genus *Cryptomyzus* living on Lamiaceae are described from specimens preserved in the collection of the Institute of Zoology of the Republic of Kazakhstan (Almaty). *Cryptomyzus* (*Cryptomyzus*) *saryarkensis* **sp. nov.** living on the ground parts of *Phlomoides tuberosa* in Saryarka region of the Kazakh Uplands in North Kazakhstan and *C.* (*C.*) *nepetaphilus* **sp. nov.** living on the ground parts of *Nepeta cataria* in Zhongar Alatau mountain system in south-eastern Kazakhstan. All measurements were taken on a Bel Photonics BIO 3T light microscope. *Cryptomyzus* (*C.*) *saryarkensis* **sp. nov.** is closest to *C.* (*C.*) *maudamanti* Guldemond, 1990 and *C.* (*C.*) *galeopsidis* (Kaltenbach, 1843). *Cryptomyzus* (*C.*) *nepetaphilus* **sp. nov.** is related to *C.* (*C.*) *ribis* (Linnaeus, 1758). Identification keys to related species of *Cryptomyzus* are provided. Two centres of species diversity of the genus *Cryptomyzus* are clearly visible in Europe (6 species) and Central Asia (9). *Cryptomyzus* (*C.*) *ribis* (Linnaeus, 1758), *C.* (*C.*) *korschelti* Börner, 1938, *C.* (*C.*) *alboapicalis* (Theobald, 1916), and *C.* (*C.*) *galeopsidis* (Kaltenbach, 1843) are distributed much more widely. *Cryptomyzus* (*C.*) *taoi* Hille Ris Lambers, 1963 is known from Pakistan, India, Russian Far East, and Japan, and *C.* (*C.*) *behboudii* Remaudière & Davatchi, 1961 is known from Turkey and Iran.

Key words: Fauna, genus, keys, new species, Palearctic, systematic

OPEN ACCESS

Academic editor: Mariusz Kanturski
Received: 8 May 2025
Accepted: 6 February 2026
Published: 25 February 2026

ZooBank: https://zoobank.org/EC1BE3F7-81B5-4B20-B179-0F62F99A17C4

Citation: Kadyrbekov RKh, Tleppaeva AM, Kolov SV (2026) Another two new aphid species of the genus *Cryptomyzus* Oestlund, 1922 (Hemiptera, Aphididae, Macrosiphini) from Kazakhstan. ZooKeys 1270: 245–254. https://doi.org/10.3897/zookeys.1270.158304

Copyright: © Rustem Kh. Kadyrbekov et al. This is an open access article distributed under terms of the Creative Commons Attribution License (Attribution 4.0 International – CC BY 4.0).

Introduction

Cryptomyzus is a Palearctic genus, currently with 19 species in the world fauna (Favret 2024). It is divided into four subgenera: *Ampullosiphon* Heikinheimo, 1955 (1 species), *Alataumyzus* Kadyrbekov, 1993 (1 species), *Cryptomyzus* Oestlund, 1922 (15 species), and *Phlomimyzus* Narzikulov & Daniyarova, 1979 (2 species). Species of this genus with known life cycle either alternate between species of *Ribes* (Grossulaceae) and species of herbaceous plants from Lamiaceae or are monoecious on species of Lamiaceae (Blackman and Eastop 2006, 2020).

Examination of materials collected in 2002 in Saryarka region of the Kazakh Uplands in North Kazakhstan and in 2017 in Zhongar Alatau mountain system in the south-east revealed two *Cryptomyzus* species new to science, which are described here. Keys for distinguishing apterous viviparous females of

new taxa from related species and a key to the apterous viviparous females of the genus *Cryptomyzus* Oestlund, 1922 of the world (updated from the key by Kadyrbekov (2021)) are provided.

Material and methods

Original microscope slides were prepared by A.M. Tleppaeva using coniferous balsam as mounting fluid (Kadyrbekov 2014). The specimens were examined using a Bel Photonics BIO 3T light microscope. Aphid identifications were done with reference to authoritatively identified material from the collection of the Institute of Zoology of Ministry of Sciences and Higher Education of Kazakhstan (IZRK), Almaty. Holotypes and paratypes of newly described species are deposited in the collection of the IZRK (Almaty, Kazakhstan). Micromed 3 U3 light microscope with Basler Powerpack 12.4 MP digital camera was used for the photomicrographs, which have been taken and mounted by S.V. Kolov.

Identification keys to apterous viviparous females of the world *Cryptomyzus* fauna were compiled (Kadyrbekov 2021). Descriptions of some *Cryptomyzus* species were also studied (Hille Ris Lambers 1953; Guldemond 1990; Kadyrbekov 1993).

All measurements are given in millimetres. Plant taxonomical names were verified according to POWO (2024). Following abbreviations are used: **BL** – body length with cauda, **ANT** – total antennae length, **ANT III** – length of III antennal segment, **ANT IV** – length of IV antennal segment, **ANT V** – length of V antennal segment, **ANT VIb** – length of base of VI antennal segment, **ANT IIIbd** – basal diameter of III antennal segment, **PT** – length of processus terminalis, **URS** – length of ultimate rostral segment, **SIPH** – siphunculus length, **CAUDA** – cauda length, **HT II** – length of II segment of hind tarsus, **Longest setae on ANT III** – setae length, **Longest setae on ABD TERG III** – setae length, setae length, **ABD TERG VIII** – setae length, **ANT/BL** – length of antennae to body length with cauda, **PT/ANT VI b** – length of processus terminalis to length of base of sixth antennal segment, **ANT III/ANT VI** – length of III antennal segment to length of VI antennal segment, **Longest setae on ANT III/–ANT IIIbd** – longest setae on ANT III to basal diameter of III antennal segment, **Cephalic frontal setae/–ANT IIIbd** – cephalic frontal setae to basal diameter of III antennal segment, **Longest setae on ABD TERG III/–ANT IIIbd** – longest setae on ABD TERG III to basal diameter of III antennal segment, **Longest setae on ABD TERG VIII/–ANT IIIbd** – longest setae on ABD TERG VIII to basal diameter of III antennal segment, **URS/HT II** – length of ultimate rostral segment to length of II segment of hind tarsus, **SIPH/BL** – siphunculus length to body length with cauda, **SIPH/CAUDA** – siphunculus length to cauda length.

Results

Cryptomyzus saryarkensis sp. nov.

https://zoobank.org/FEA01124-0A9D-4773-A5C3-C6E1289B89B9

Description. Apterous viviparous female, from 11 specimens (Fig. 1, Table 1). In life: body white with green markings, eyes reddish. On slide: body and appendages pale without dark parts apart from pale brown tarsi. Body elliptical. Cuticle wrinkled

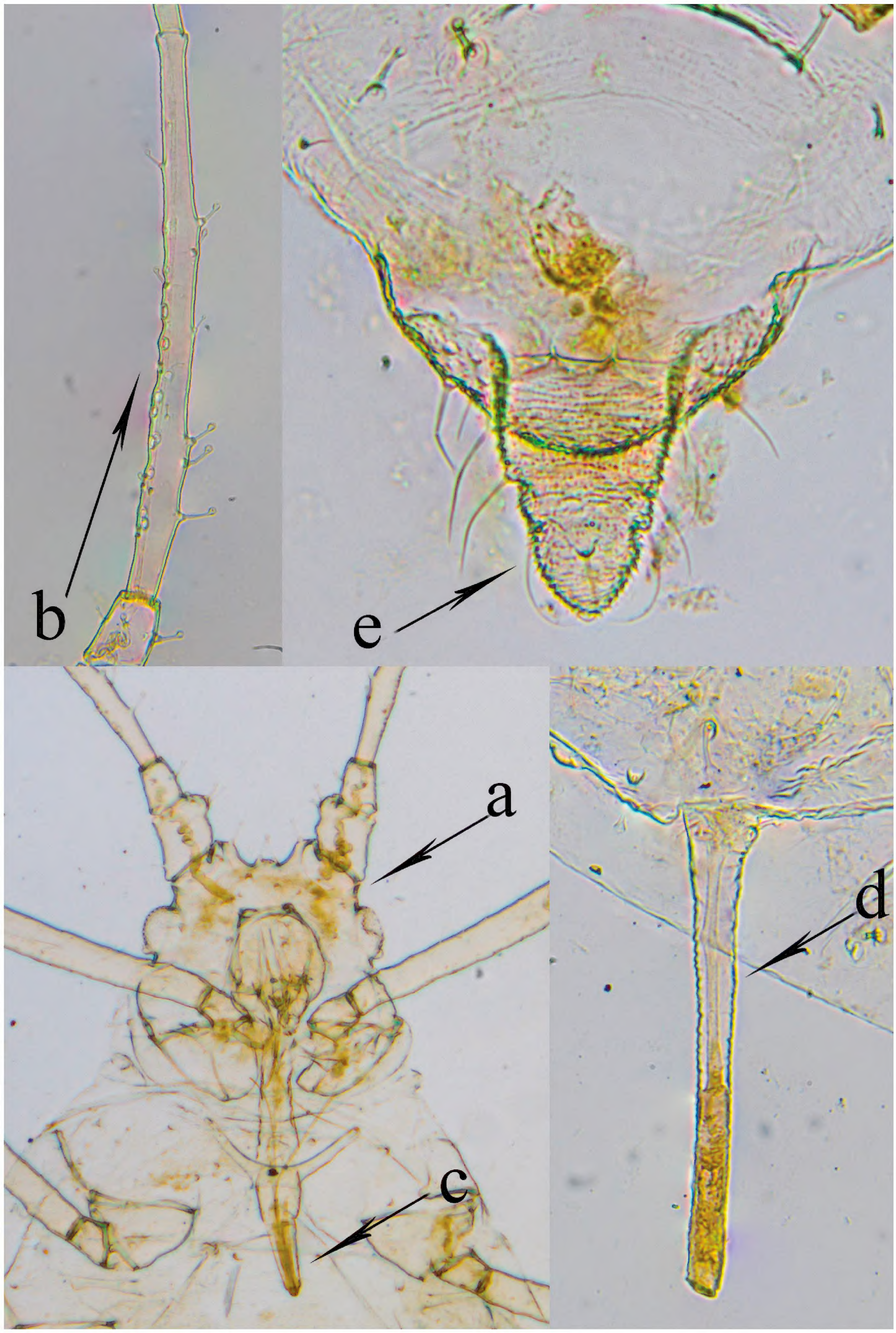

Figure 1. *Cryptomyzus saryarkensis* sp. nov. **a.** Head; **b.** Antennal segment III; **c.** Ultimate rostral segment; **d.** Siphunculus; **e.** Cauda.

in places. Frontal groove moderately deep, 0.15–0.22 between apices of antennal tubercles (Fig. 1a). Antennal tubercles distinct and divergent. Median frontal tubercle well developed, quadrate. Cephalic hairs long, thickened, capitate or funnel-shaped. Antennae six-segmented. First antennal segment with a large protuberance on inner side at apex and bears 4–5 setae. Numbers of setae on II and III antennal segments are II – 5, III – 4–7. Antennal segment III with 5–13 secondary rhinaria (Fig. 1b). Setae on antennal segment III longer than its diameter at base, slightly capitate. Rostrum reaches beyond bases of hind coxae; ultimate rostral segment long, slender (Fig. 1c), with 2–4 accessory setae. Siphunculi straight, with slightly widened bases and small indistinct flanges (Fig. 1d). Cauda bluntly triangular or helmet-shaped, with 5 long, pointed setae (Fig. 1e). Dorsal setae on abdominal tergites II–V capitate or funnel-shaped. Numbers of setae on abdominal tergites: III – 7–8, VIII – 4–6. Marginal tubercles absent. Genital plate broadly oval, with 2–4 discal setae and 6–10 posterior setae. Legs long. Femur with capitate setae, hind tibia with pointed setae at apex. First tarsal segments with 3:3:2 setae.

Types. *Holotype*: • apterous viviparous female, slide no 3005, KAZAKHSTAN, Akmola region, "Burabai" natural park, Zhukey lake environs, Berkutty mounting, *Phlomoides tuberosa*, 23 July 2002, R. Kadyrbekov leg. (Institute of Zoology, Almaty, Kazakhstan). ***Paratypes*:** • 10 apterous; same place and date.

Etymology. The new species is named after Saryarka region of the Kazakh Uplands.

Biology. This aphid lives on the undersides of leaves of *Phlomoides tuberosa* (L.) Moench (Lamiaceae). It is not attended by ants. The life cycle is unknown.

Systematic relationships. New species belongs to the group of species with setae of antennal segment III exceeding its diameter at base and having fewer than 15 setae on abdominal tergites I–IV (Kadyrbekov 2021). It is closest to *C.* (*C.*) *maudamanti* Guldemond and *C.* (*C.*) *galeopsidis* in having the proportion of siphunculi to body length 0.15 or more. It differs from both species in having straight lines, expanded only at the bases of the siphunculi, PT/ANT VIb = 10.50–12.00 (vs 0.90–10.00) and URS/HT II = 1.41–1.70 (vs 0.90–1.20).

***Cryptomyzus nepetaphilus* sp. nov.**

https://zoobank.org/1C75AEC5-2E64-4C2E-BD87-A741A83936CB

Description. Apterous viviparous female, from 4 specimens (Fig. 2, Table 1). In life: body white with green markings, eyes reddish. On slide: body and appendages pale without dark parts apart from pale brown tarsi. Body elliptical. Cuticle thick, wrinkled in places. Frontal groove moderately deep, 0.16–0.17 distance between apices of antennal tubercles (Fig. 2a). Antennal tubercles distinct and divergent. Median frontal tubercle well developed, quadrate. Cephalic setae long, thickened, capitate or funnel-shaped. Antennae six-segmented. First antennal segment with a large protuberance on inner side at apex and bears 4–5 setae. Numbers of setae on antennal segments II and III are II – 4, III – 3–4. Basal part of antennal segment III with 5–7 secondary rhinaria (Fig. 2b). Setae on antennal segment III shorter than or equal to its diameter at base, slightly capitate. Rostrum reaches beyond bases of hind coxae; ultimate rostral segment long, slender (Fig. 2c), and bears 6–8 accessory setae. Siphunculi subcylindrical, with small, indistinct flanges (Fig. 2d). Cauda bluntly triangular or helmet-shaped, with 5–6

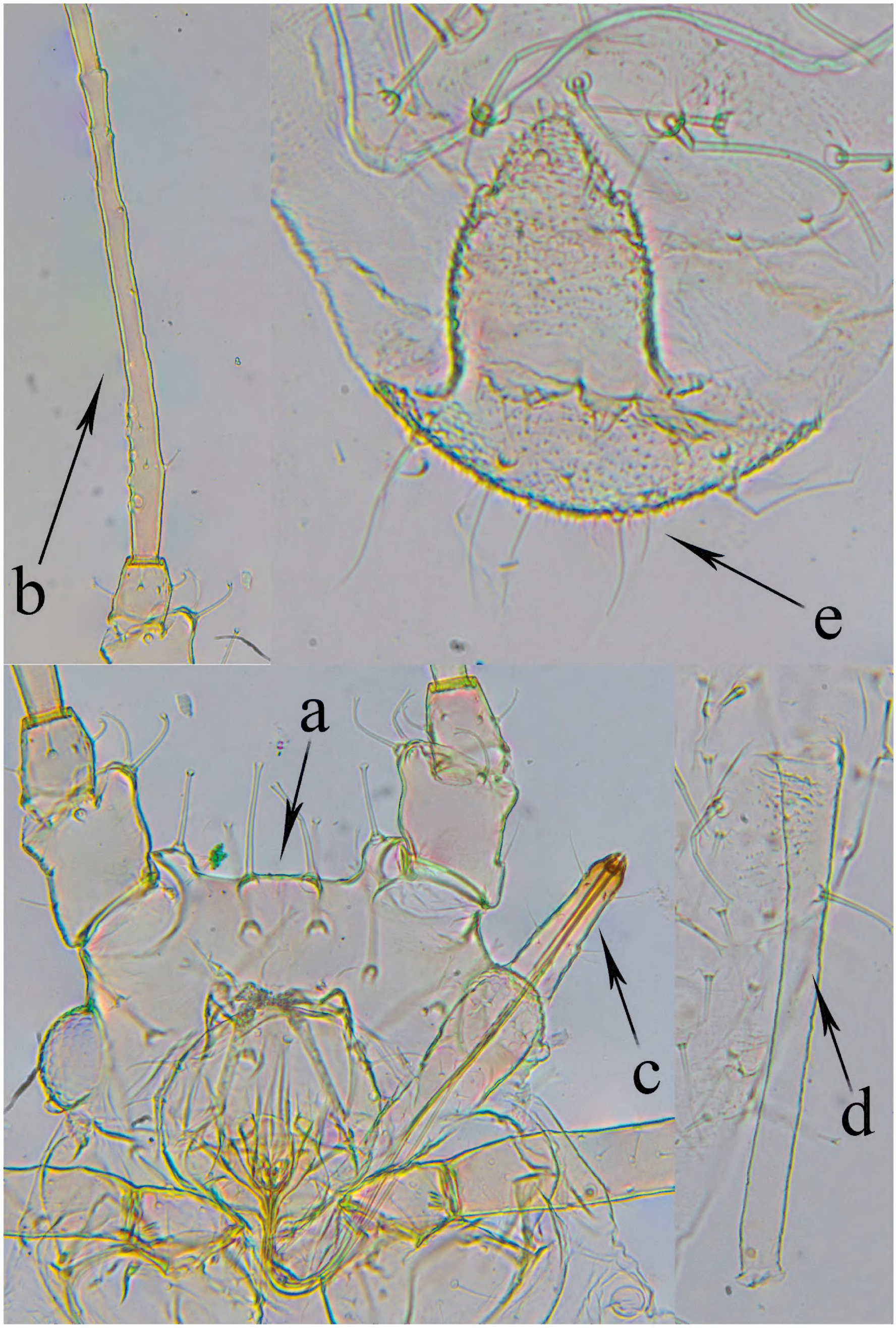

Figure 2. *Cryptomyzus nepetaphilus* sp. nov. **a.** Head; **b.** Antennal segment III; **c.** Ultimate rostral sFegment; **d.** Siphunculus; **e.** Cauda.

long, pointed setae (Fig. 2e). Dorsal setae on II–V abdominal tergites are capitate or funnel-shaped. Numbers of setae on abdominal tergites: III – 10–12, VIII – 6–8. Marginal tubercles are absent. Genital plate is broadly oval, with 2–4 discal setae and 7–9 posterior setae. Legs are long. Femur with capitate setae, hind tibia with pointed setae at apex. First tarsal segments with 3:3:2 setae.

Types. ***Holotype*****:** • apterous viviparous female, slide no 5752, KAZAKHSTAN, Zhetysu region, Zhongar Alatau mounting system, "Zhongar-Alatau" natural park, 8 km to east from Topolevka small town, "Osinovaja" kordon, H–1250 m, *Nepeta cataria*, 26 July 2017, R. Kadyrbekov leg. (Institute of Zoology, Almaty, Kazakhstan). ***Paratypes*****:** • 3 apterous, same place and date.

Etymology. The new species is named after it host plant.

Biology. This aphid lives on the undersides of leaves of *Nepeta cataria* L. (Lamiaceae). It is not attended by ants. The life cycle is unknown.

Systematic relationships. This new species belongs to the group of species with setae on antennal segment III, which are shorter than or equal to its diameter at the base and with straight, unswollen siphunculi (Kadyrbekov 2021). It differs from *C. alatavicus* in having ANT III/ANT VI T = 0.42–0.59 (vs 0.68–0.76) and PT/ANT VIb = 9.50–10.21 (vs 6.30–7.30). *Cryptomyzus nepetaphilus* sp. nov. differs from *C.* (*C.*) *ribis* in the proportion of the longest setae on ABD TERG III/–ANT IIIbd (not more 3 and 3.97–4.38) and SIPH/BL = 0.18–0.20 (vs 0.20–0.25).

Table 1. Measurements of *Cryptomyzus nepetaphilus* sp. nov. and *C. saryarkensis* sp. nov.

Measurements	*C. saryarkensis* sp. nov.	*C. nepetaphilus* sp. nov.
	Apterous viviparous females (*n* = 11)	Apterous viviparous females (*n* = 4)
BL	1.95–2.36	2.06–2.21
ANT	2.89–3.54	2.56–2.63
ANT III	0.58–0.68	0.52–0.56
ANT IV	0.48–0.63	0.36–0.42
ANT V	0.43–0.53	0.31–0.35
ANT VIb	0.10–0.13	0.10–0.11
ANT IIIbd	0.029–0.035	0.027–0.029
PT	0.97–1.39	0.99–1.06
Longest setae on ANT III	0.035–0.040	0.023–0.029
Longest frontal setae	0.046–0.052	0.081–0.104
URS	0.14–0.15	0.15–0.16
HT II	0.08–0.10	0.09–0.10
Longest setae on ABD TERG III	0.056–0.058	0.115–0.127
Longest setae on ABD TERG VIII	0.046–0.052	0.115–0.127
SIPH	0.31–0.39	0.39–0.43
CAUDA	0.10–0.15	0.12–0.14
Ratios:		
ANT/BL	1.39–1.59	1.12–1.16
PT/ANT VIb	10.50–12.00	9.50–10.21
ANT III/ANT VI	0.42–0.59	0.45–0.52
Longest setae on ANT III/ANT III BD	1.00–1.27	0.80–1.00
Cephalic frontal setae/–ANT III BD	1.31–1.59	2.79–3.59
Longest setae on ABD TERG III/–ANT IIIbd	1.66–2.00	3.97–4.38
Longest setae on ABD TERG VIII/–ANT IIIbd	1.31–1.59	2.79–3.59
SIPH/BL	0.15–0.18	0.18–0.20
SIPH/CAUDA	2.22–3.75	2.85–3.50

Key to the apterous viviparous females of the genus *Cryptomyzus* Oestlund, 1922 of the world (updated from the key by Kadyrbekov 2021)

1 Setae ABD TERG I–IV and median frontal and antennal tubercles shorter ANT IIIbd, inconspicuously capitate. Alternates between *Ribes rubrum* L. and *Galeopsis*, *Stachys*, *Lamium* ..... ***C.* (*Ampullosiphon*) *stachydis* (Heikinheimo, 1955)**

– Setae ABD TERG I–IV and median frontal and antennal tubercles usually much longer ANT IIIbd, either on thick bases and capitate or needle-shaped **2**

2 Setae ABD TERG I–IV and median frontal and antennal tubercles long and needle-shaped. SIPH without distinct flanges..... **3**

– Setae ABD TERG I–IV, median frontal and antennal tubercles capitate. SIPH with distinct flanges..... **4**

3 Median frontal tubercle absent. PT/ANT VIb 7.0–7.5. III ANT with about 3 secondary rhinaria. URS/HT II 1.5. ABD TERG III–V with 12–16 setae. On *Phlomis canescens* Regel ..... ***C.* (*Phlomimyzus*) *tadzhikistanicus* Narzikulov & Daniyarova, 1979**

– Median frontal tubercle developed. PT/ANT VIb 7.5–9.5. III ANT with 7–19 secondary rhinaria. URS/HT II 1.0–1.1. ABD TERG III–V with 18–27 setae. On *Leonurus turkestanicus* V.I. Krecz. & Kuprian. and occasionally *Lamium album* L. ..... ***C.* (*P.*) *multipilosus* Kadyrbekov, 2000**

4 Secondary rhinaria occur on ANT III–IV and sometimes on ANT V. Dark medial pleural, and marginal sclerites developed on all ABD TERG. SIPH dark brown, cylindrical, with large flanges. Cauda trapezoid. Alternates between *Ribes saxatile* Pall. and *Eriophyton lamiiflorum* (Rupr.) Bräuchler..... ***C.* (*Alataumyzus*) *malkovskii* Kadyrbekov, 1993**

– Secondary rhinaria occur only on ANT III–IV. Dark medial pleural, and marginal sclerites absent from all ABD TERG. SIPH pale, cylindrical or swollen, with small flanges. Cauda bluntly triangular or helmet-shaped..... **5**

5 Longest setae ANT III usually shorter ANT IIIbd and shorter than the ANT I setae..... **6**

– Longest setae on ANT III longer ANT IIIbd, about the same length as those the ANT I setae **15**

6 URS/HT II not less 1.8 ..... **7**

– URS/HT II not more 1.7 ..... **9**

7 ANT III with 0–2 secondary rhinaria. ANT IV shorter than ANT V. Longest setae on ANT III/ANT III BD 0.5–0.8. On *Phlomis* **8**

– ANT III with 6–8 secondary rhinaria. ANT IV longer than ANT V. Longest setae on ANT III/ANT III BD. Longest setae on ANT III/ANT III BD 0.9–1.0. Alternates between *Ribes alpinum* L. and *Clinopodium vulgare* L., *Betonica officinalis* L. ..... ***C.* (*Cryptomyzus*) *heinzei* Hille Ris Lambers, 1953**

8 URS/HT II 2.7–3.0 and URS/–ANT VIb 2.8–3.3. SIPH/CAUDA 2.9–3.5 and SIPH/BL 0.17–0.20. H II/ANT VIb 1.0–1.1. On *Phlomis olivieri* Benth..... ***C.* (*C.*) *behboudii* Remaudière & Davatchi, 1961**

– URS/HT II 1.8–2.0 and URS/–ANT VIb 1.4–1.6. SIPH/CAUDA 3.7–5.0 and SIPH/BL 0.23–0.30. H II/ANT VIb 0.75–0.85. On *Phlomis salicifolia* Regel ..... ***C.* (*C.*) *sairamugamicus* Kadyrbekov, 2021**

9 SIPH approximately cylindrical.....**10**
– SIPH distinctly swollen **12**
10 ANT III/ANT VI 0.46–0.53. ANT III with 5–7 secondary rhinaria. PT/ANT VIb 8.8–10.5. SIPH/CAUDA 2.5–3.5 and SIPH/BL 0.18–0.24 .....**11**
– ANT III/ANT VI 0.68–0.76. ANT III with 10–37 secondary rhinaria. PT/ANT VIb 6.3–7.3. SIPH/CAUDA 2.0–2.3 and SIPH/BL 0.16–0.18. On *Scutellaria* .....***C.* (*C.*) *alatavicus* Kadyrbekov, 1993**
11 Longest setae on ABD TERG III/–ANT IIIbd not more 3. SIPH/BL 0.20–0.25 in norm more 0.20. Alternates between *Ribes* and *Stachys*..... ..... ***C.* (*C.*) *ribis* (Linnaeus, 1758)**
– Longest setae on ABD TERG III/–ANT IIIbd 3.97–4.38. SIPH/BL 0.18–0.20. On *Nepeta cataria* L. .....***C.* (*C.*) *nepetaphilus* sp. nov.**
12 SIPH/CAUDA not more 4.5. URS with not less than 9 accessory setae ..**13**
– SIPH/CAUDA not less 5. URS with not more than 9 accessory setae **14**
13 ANT III/ANT VI 0.45–0.55. PT/ANT VIb 8.0–10.5. ABD TERG III–V with 12–18 setae. Alternates between *Ribes alpinum* L., *R. heterotrichum* C.A. Mey., *R.* sp. and *Stachys*.....***C.* (*C.*) *korschelti* Börner, 1938**
– ANT III/ANT VI 0.59–0.67. PT/ANT VIb 6.0–8.5. ABD TERG III–V with 6–8 setae. On *Ballota nigra* L. and occasionally *Lamium album* L. .... ***C.* (*C.*) *ballotae* Hille Ris Lambers, 1953**
14 ANT III/ANT VI 0.43–0.54. PT/ANT VIb 5.8–8.2. URS with 4–6 accessory setae. SIPH/CAUDA 5.1–6.5 and SIPH/BL 0.30–0.35. On *Betonica betonicifolia* (Rupr. Ex O. Fedtsch. & B. Fedtsch.) Sennikov ....***C.* (*C.*) *karzhantavicus* Kadyrbekov, 2021**
– ANT III/ANT VI 0.57–0.59. PT/ANT VIb 9.0–9.1. URS with 7–9 accessory setae. SIPH/CAUDA 5.0–5.1 and SIPH/BL 0.20–0.25. On *Marrubium supinum* L., *Lamium*, *Leonurus sibiricus* L., *Phlomoides bracteosa* (Royle ex Benth) Kamelin & Makhm. ....***C.* (*C.*) *taoi* Hille Ris Lambers, 1963**
15 ABD TERG I–IV each with 12–20 setae **16**
– ABD TERG I–IV each with 5–14 setae **18**
16 ANT III with 1–4 secondary rhinaria. URS with 6 accessory setae. On *Eriophyton* ..... ***C.* (*C.*) *transiliensis* Kadyrbekov, 1993**
– ANT III with more than 5 secondary rhinaria. URS with not more than 4 accessory hairs **17**
17 ANT III with 11–22 secondary rhinaria. URS/HT II 1.4–1.5. SIPH/CAUDA 1.5–2.1. PT/ANT VIb less than 9t. On *Leonurus cardiaca* L. .... ***C.* (*C.*) *leonuri* Bozhko, 1961**
– ANT III with 5–15 secondary rhinaria. URS/HT II URS/HT II 1.2. SIPH/CAUDA 1.0–1.5. PT/ANT VIb 10.1–11.0. On *Lamium album* L. ....***C.* (*C.*) *alboapicalis* (Theobald, 1916)**
18 SIPH/BL 0.12–0.15. On *Lamium maculatum* L. .... ***C.* (*C.*) *ulmeri* (Börner, 1952)**
– SIPH/BL more than 0.15.....**19**
19 SIPH subcylindrical. PT/ANT VIb 10.50–12.00. URS/HT II 1.41–1.70. On *Phlomoides tuberosa*.....***C.* (*C.*) *saryarkensis* sp. nov.**
– SIPH in norm swollen. PT/ANT VIb not more 10.00. URS/HT II not more 1.20. On other plants.....**20**

20 Rostrum extending backward to hind coxae. ABD TERG I–IV each, with 8–14 setae. SIPH always swollen. Alternates between *Ribes rubrum* L. and *Galeobdolon luteum* L. ..... ***C.* (*C.*) *maudamanti* Guldemond, 1990**

– Rostrum shorter. ABD TERG I–IV each, with 4–11 setae. SIPH sometimes not swollen. Alternates between *Ribes nigrum* L., *R. rubrum* L. and *Galeopsis*..... ***C.* (*C.*) *galeopsidis* (Kaltenbach, 1843) complex**

Discussion

There are now 21 species of aphids in the genus *Cryptomyzus* worldwide, including the two new species. Because two new species were described, the existing identification key to species by Kadyrbekov (2021) was modified.

Two centres of species diversity of the genus *Cryptomyzus* are clearly visible in Europe (6 species) and Central Asia (9). *Cryptomyzus* (*C.*) *ribis*, *C.* (*C.*) *korschelti*, *C.* (*C.*) *alboapicalis*, *C.* (*C.*) *galeopsidis* are distributed much more widely. *Cryptomyzus* (*C.*) *taoi* is known from Pakistan, India, and the Far East, and *C.* (*C.*) *behboudii* is known from Turkey and Iran.

Additional information

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

Use of AI

No use of AI was reported.

Funding

This research was been funded by the Committee of Science of the Ministry of science and Higher Education of the Republic of Kazakhstan (Grant No BR28712767 “Study of ecological, socio-demographic, economic-geographic and paleobiogeographical aspects of Ural and assessment of natural resource potential)”.

Author contributions

All authors have contributed equally.

Data availability

All of the data that support the findings of this study are available in the main text.

References

Blackman RL, Eastop VF (2006) Aphids on the World’s Herbaceous Plants and Shrubs. Volume 1, Host Lists. Volume 2, The Aphids. John Wiley and Sons, Chichester, 8 + 1439 pp.

Blackman RL, Eastop VF (2020) Aphids on the World’s plants. An online identification and informative guide. https://www.aphidsonworldsplants.info [Accessed 29.09.2020]

Favret C (2024) Aphid Species File. Version 5.0/5.0. http://Aphid.Species.File.org [Accessed 12.12.2024]

Guldemond JA (1990) On aphids, their host plants and speciation: a biosystematic study of the genus *Cryptomyzus*. Ph.D. thesis, Landbouwuniversiteit, Wageningen, The Netherlands. https://doi.org/10.18174/203155

Hille Ris Lambers D (1953) Contributions to a monograph of the Aphididae of Europe. Temminckia 9: 1–175.

Kadyrbekov RKh (1993) Review of the aphids of *Cryptomyzus* genus (Homoptera, Aphididae) of Kazakhstan fauna with description three new species. Zoological Journal 72(1): 44–53.

Kadyrbekov R (2014) Aphids (Homoptera, Aphidoidea) of the mountains of Kazakhstan. LAP, Saarbrücken, 442 pp.

Kadyrbekov RKh (2021) Two new aphid species of the genus *Cryptomyzus* Oestlund, 1922 (Hemiptera, Aphididae) from Kazakhstan, and keys to apterous and alate viviparous females. Zootaxa 4903(2): 265–274. https://doi.org/10.11646/zootaxa.4903.2.6

POWO (2024) Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. http://www.plantsoftheworldonline.org/ [Accessed 11.02.2026]